

Vermont Department of Environmental Conservation
Watershed Management Division
Rutland Regional Office
88 Merchants Row, Suite 430 Asa Bloomer Building
Rutland, VT 05701-5903

Agency of Natural Resources

<http://dec.vermont.gov/watershed/rivers>

[cell] 802-490-6163

[fax] 802-786-5915

AUTHORIZATION TO CONDUCT STREAM ALTERATION ACTIVITIES

Pursuant to Section C.2.2 of the VT Stream Alteration General Permit (Reporting activities not requiring an application)

Project Number: **SA-09-017-2016**

Watercourse: **Locust Creek**

Applicant Name: **Town of Barnard**

Email: **pfellows@trorc.org**

Mailing Address: **P.O. Box 274, Barnard, VT 05031**

Phone: **(802) 234-9211**

Project Location: **Chateauguay Road, Barnard, VT**

Lat/Lon: **N 43 45' 23" / W 72 38' 7.6"**

The Secretary of the Vermont Agency of Natural Resources (VT ANR) has determined that:

1. This project authorizes under **Section C.2.2.2 – Maintenance of existing channelized perennial stream.**
2. The proposed activity is eligible for coverage under the VT ANR Stream Alteration General Permit (SAGP).
3. The proposed activity will meet the terms and conditions of the General Permit provided:
 - a) The project will be completed **as illustrated on plans, dated 6/2/2016, by Holden Engineering,** and as approved by the Vermont Agency of Natural Resources.
 - b) The project will not adversely affect the public safety by increasing flood hazards.
 - c) The project will not significantly damage fish life or wildlife.
 - d) The project will not significantly damage the rights of riparian owners.
 - e) The project will not obstruct the movement of aquatic life indigenous to the waterbody beyond the actual duration of construction.
 - f) The project is conducted in a manner which minimizes or avoids any discharge of sediment or other pollutants to surface waters in violation of the VT Water Quality Standards.
 - g) The ANR River Management Engineer is notified by phone or email when construction begins and is completed.
 - h) **Normal in-stream Time of Year working dates for all SAGP activities are from July 1st through October 1st,** any in-stream work outside these dates will require an authorization by the River Management Engineer (RME).
 - i) This authorization has been posted for three-day public comment. This authorization constitutes final approval.

Additional Conditions: Onsite preconstruction meeting is required prior to commencement of any instream work activities.

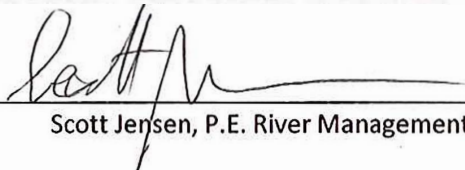
If there are any changes in the project plan or deviation in construction from the approved plans, Permittee must notify the ANR River Management Engineer immediately via phone (802) 490-6962 or email scott.jensen@vermont.gov

If the project is constructed as you have described, as shown on the above referenced approved plans and according to the above conditions, there is no reason to expect any violation of Vermont Water Quality Standards.

Signed this 19th day of October, 2016

This permit expires on October 1, 2017.

Alyssa B. Schuren, Commissioner
Department of Environmental Conservation

by: 
Scott Jensen, P.E. River Management Engineer

RIVERBANK STABILIZATION PROJECT BETWEEN MOUNT HUNGER ROAD AND CHATEAUGUAY ROAD ALONG LOCUST CREEK

MUNICIPAL CONTACTS:

Readsboro Board of Selectmen
c/o Tim Johnson
115 North Road
P.O. Box 157
Barnard, VT 05031
(802) 234-6827

Highway Department
c/o Lance Webster
P.O. Box 157
Barnard, VT 05031
(802) 234-6961

Barnard Volunteer Fire Department
6220 Route 12
Barnard, VT 05031
(802) 234-5263

GEOTECHNICAL ENGINEER:

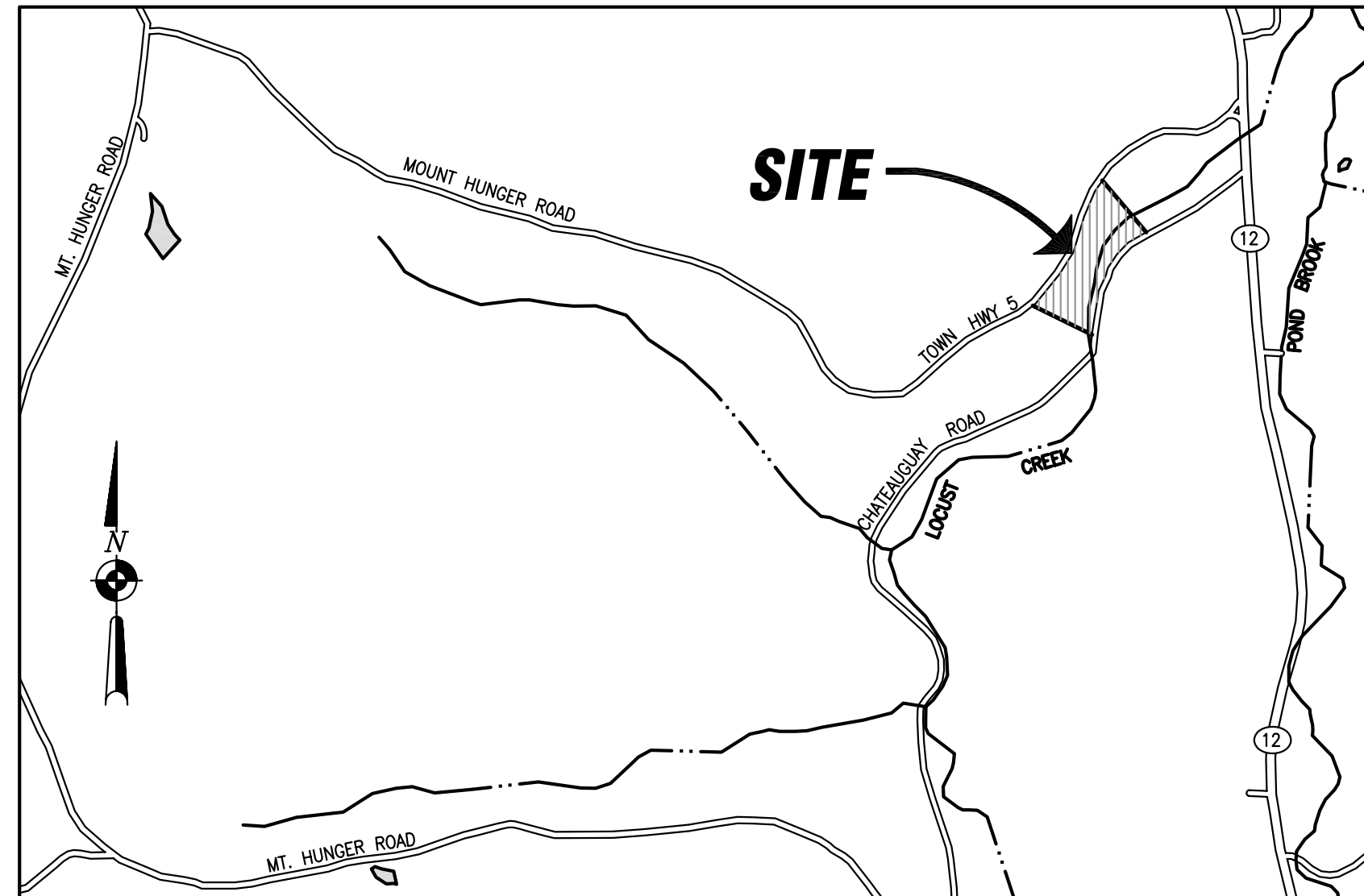
HTE Northeast, Inc.
2 Cote Lane, Suite 1
Bedford, NH 03110
(603) 668-1654

REGULATORY CONTACTS:

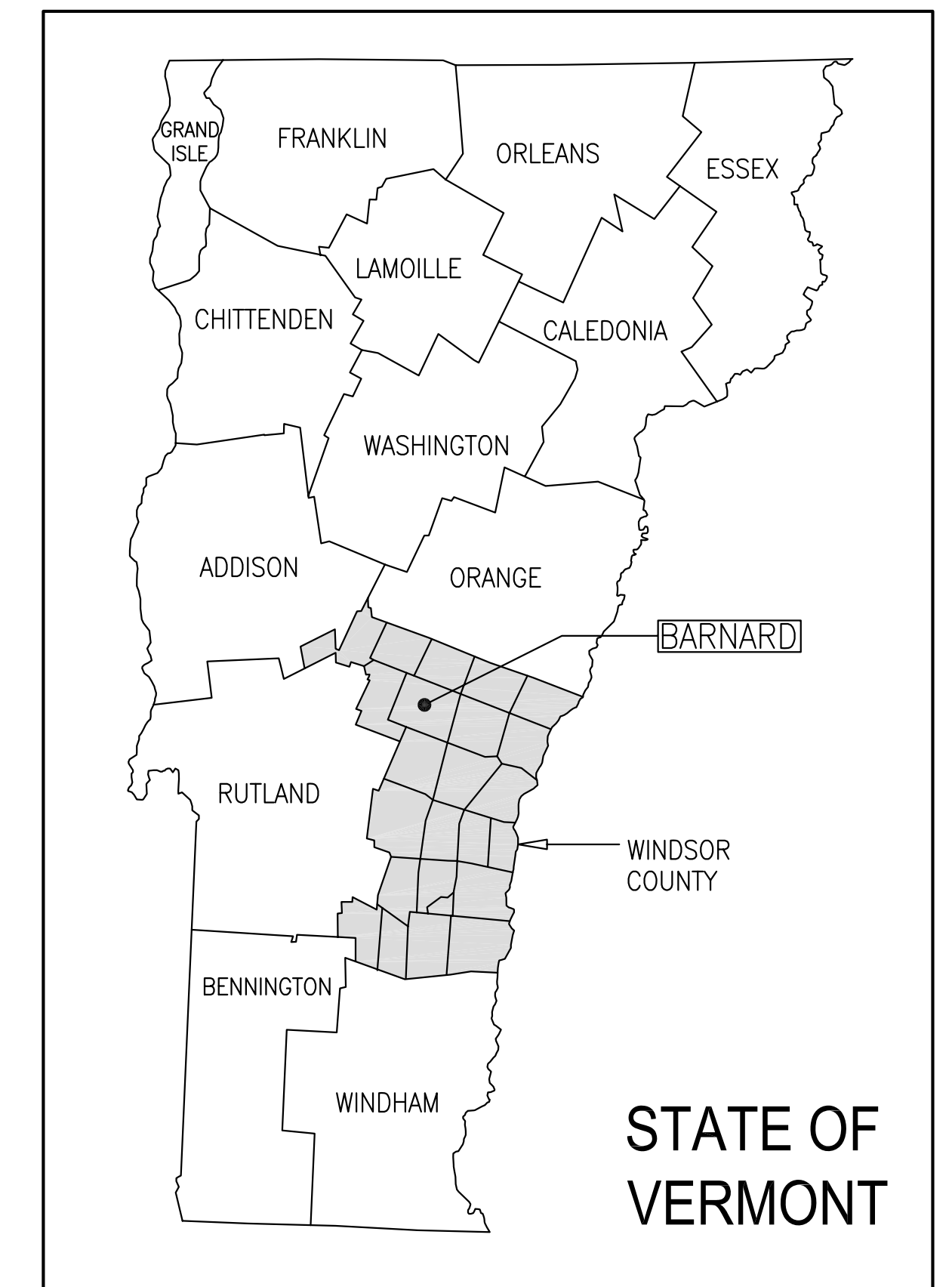
Emergency Hazardous Materials Spill Reporting
Agency of Natural Resources
Waste Management Division
Vermont Department of Conservation
One National Life Drive
Montpelier VT 05620-350
(802) 828-1138 (8:00am - 4:30pm)
(800) 641-5005 (After Hours)

US Army Corps of Engineers
c/o Angela Repella
11 Lincoln Street
Essex Junction, VT 05452
(802) 872-2893

Agency of Natural Resources
Vermont Department of
Environmental Conservation
Rivers Program
c/o Scott Jensen, P.E.
88 Merchants Row, Suite 430
Rutland, VT 05701-5903
(802) 490-6962



1" = 400'
TOWN OF BARNARD
COUNTY OF WINDSOR
STATE OF VERMONT



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- 6. EROSION CONTROL DETAILS
- 7. EROSION CONTROL NOTES AND MEASURES

PLANS PREPARED BY:
HOLDEN ENGINEERING & SURVEYING, Inc.
BEDFORD, NH
WILLIAM C. ROSSIGNOL MAY 25, 2016

HOLDEN ENGINEERING & SURVEYING, Inc.

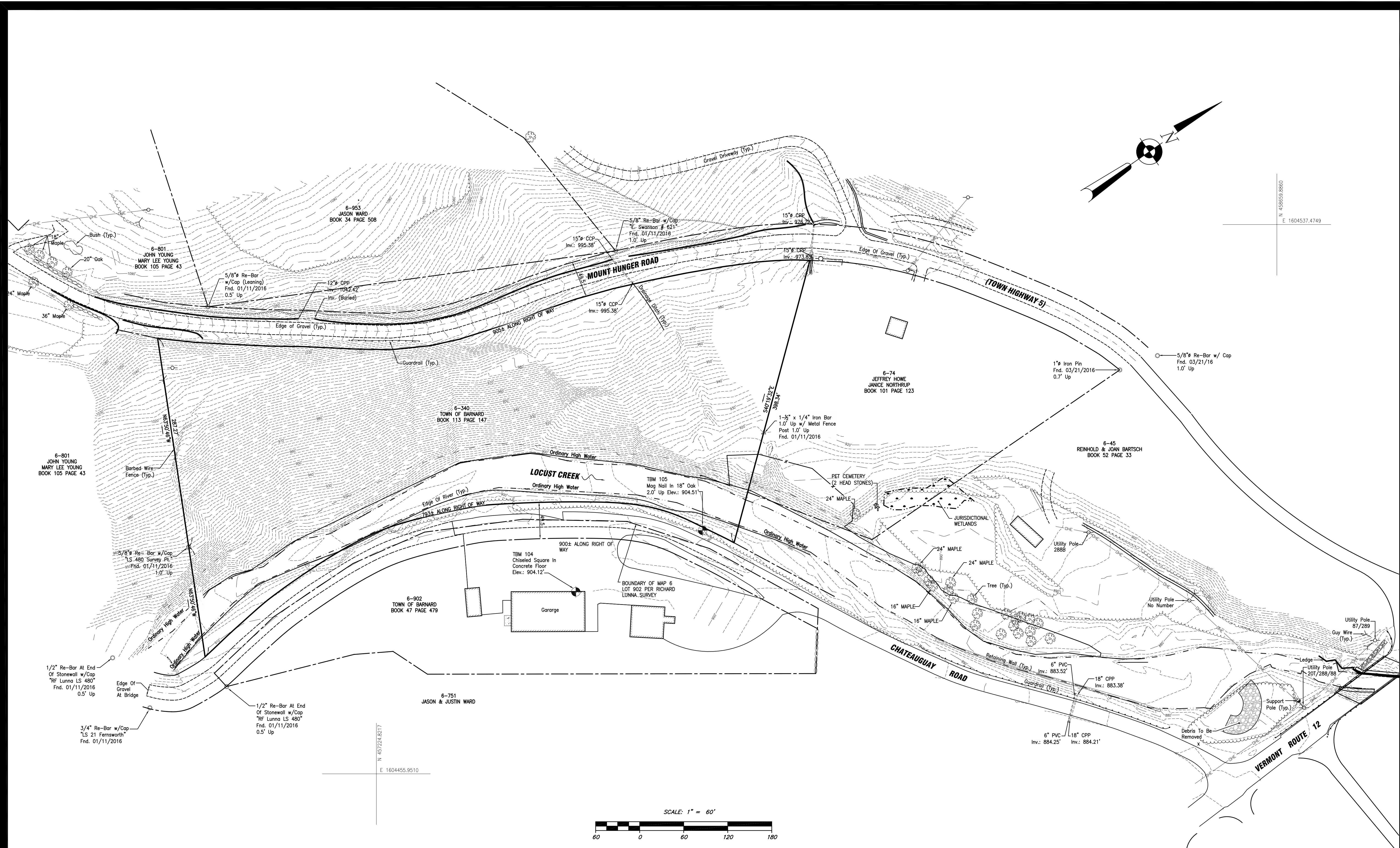
56 Old Suncook Road - Unit #4
PO Box 480 Concord, N.H. 03302
(603) 225-6449
9 Constitution Drive
Bedford, N.H. 03110
(603) 472-2078

COVER SHEET
LOCUST CREEK RIVERBANK STABILIZATION PROJECT
BARNARD, VERMONT

Date:	Revision Description	Drwn.	Chkd.

Date: 06.02.16
Scale: 1" = 50'
Drawn By: REL
Checked By: DSJ
Job No: 1520385
Sheet No. 1 of 7

15203565_385 Chateaugay Rd., Barnard, VT.dwg/CA001 Aug. 03, 2016 RLADD
Proj. Created: 06/03/16



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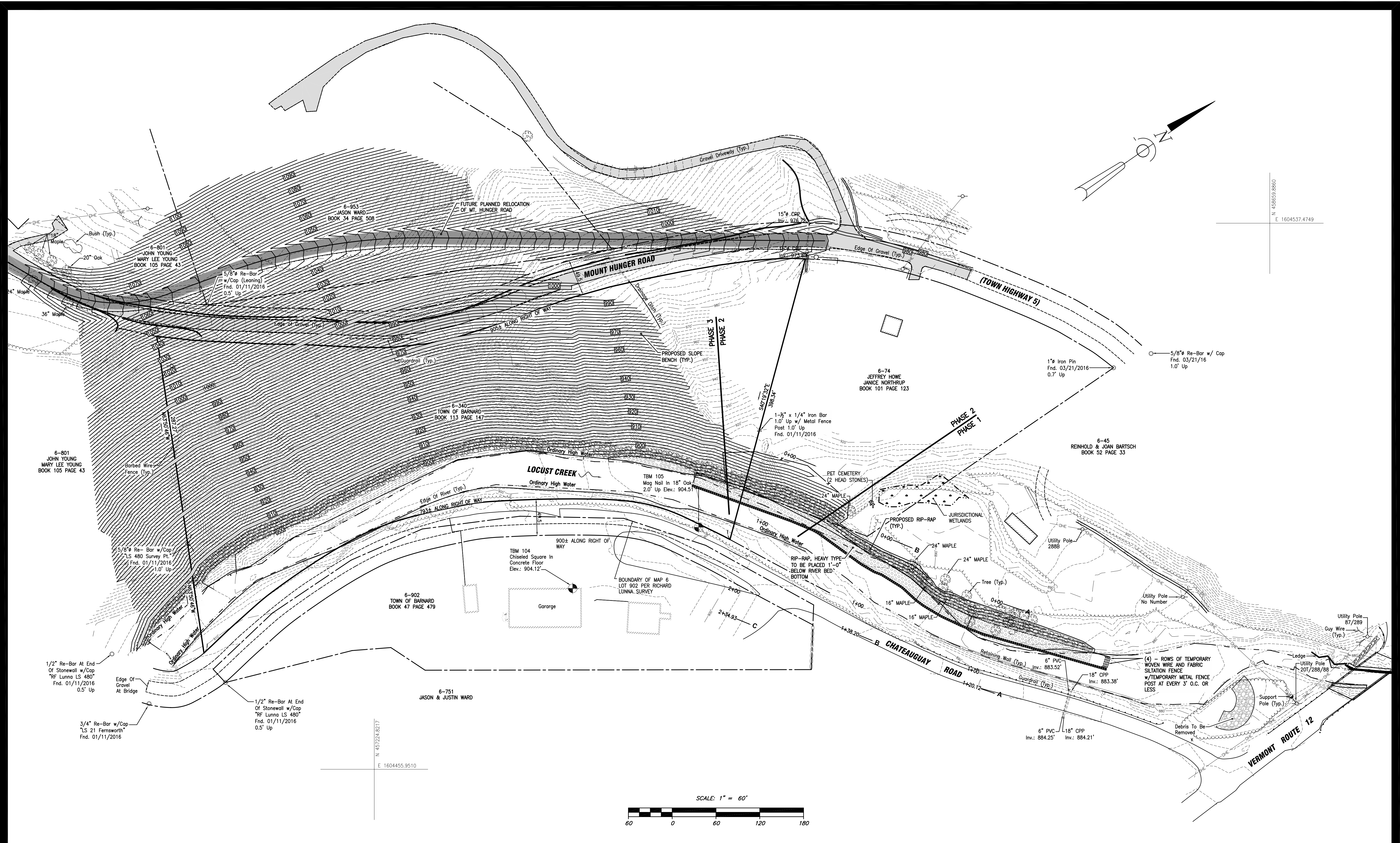
56 Old Suncook Road - Unit #4
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(603) 225-6449

9 Constitution Drive
Bedford, N.H. 03110
(603) 472-2078

EXISTING CONDITIONS
LOCUST CREEK RIVERBANK STABILIZATION PROJECT
BARNARD, VERMONT

Date:	Revision Description	Drwn.	Chkd.	Date:
				06.02.16
				Scale: 1" = 50'
				Drawn By: REL
				Checked By: DSJ
				Job No: 1520385
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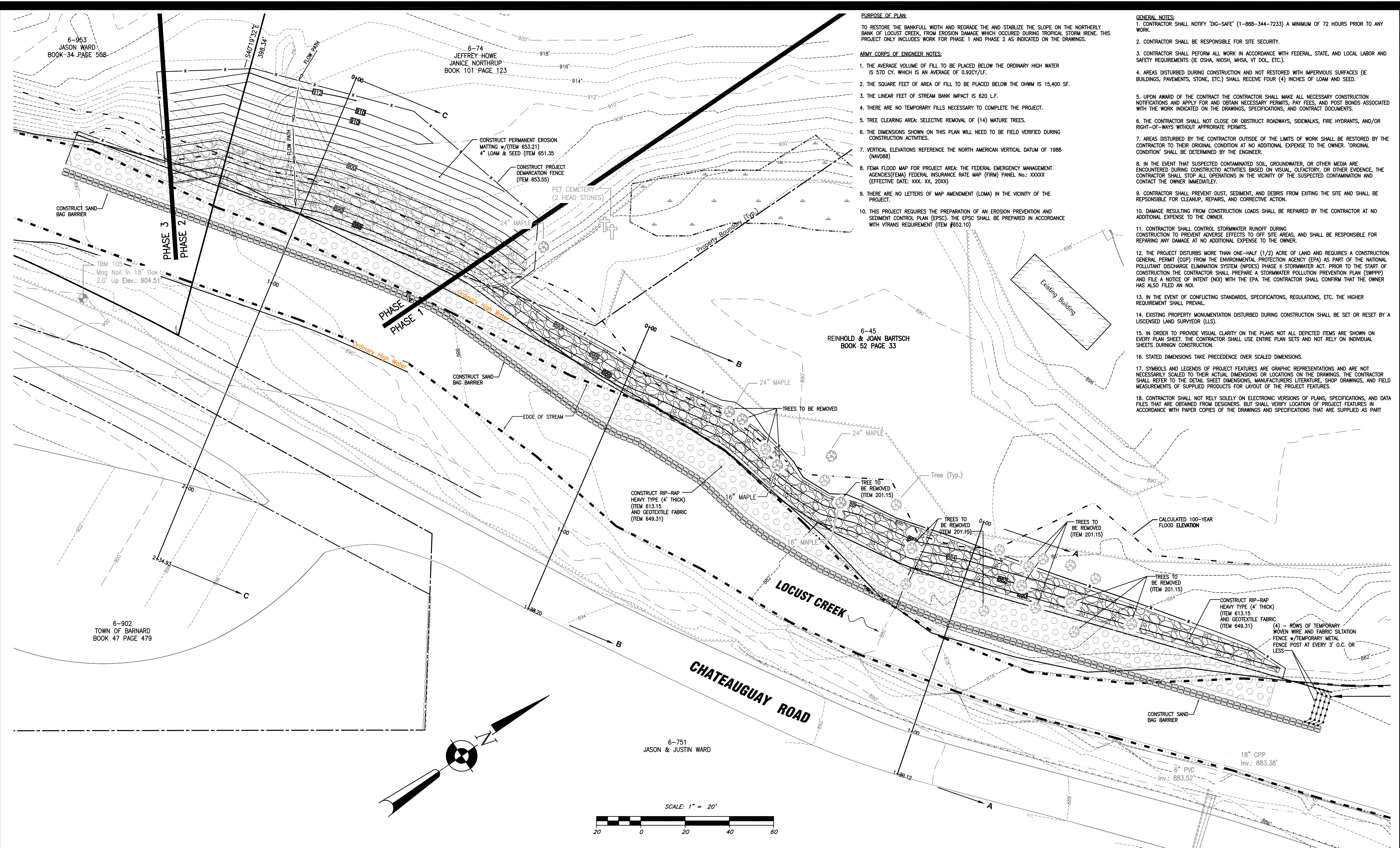
OVERALL PROJECT GRADING
 LOCUST CREEK RIVERBANK STABILIZATION PROJECT
 BARNARD, VERMONT

Date:	Revision Description	Drwn.	Chkd.

Date: 06.02.16
 Scale: 1" = 60'
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1520385_385 Chateaugay Rd., Barnard, VT.dwg/CAADD, Aug. 03, 2016 RLADD Proj. Created: 06/03/16



PURPOSE OF PLAN:

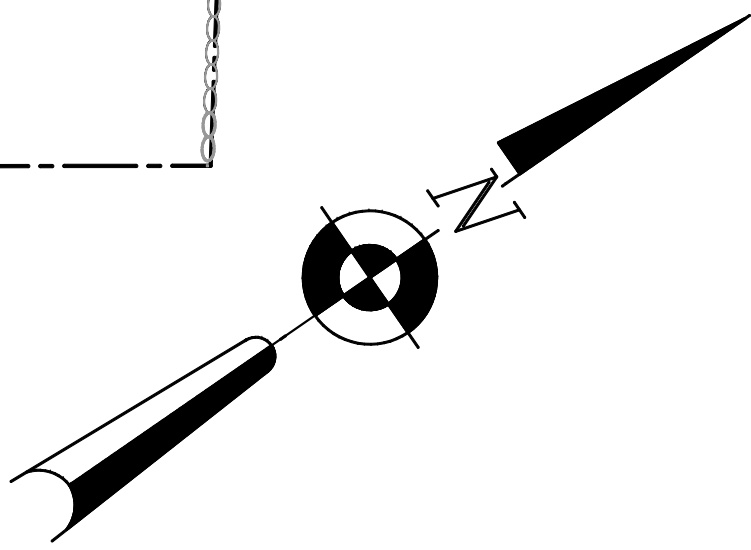
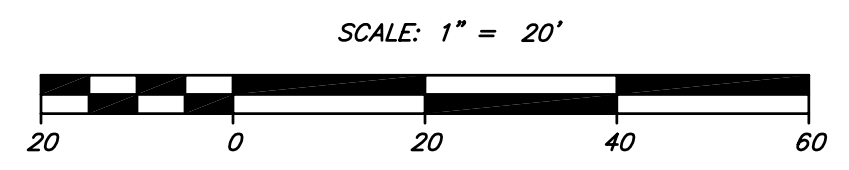
TO RESTORE THE BANKFULL WIDTH AND REGRADE THE AND STABILIZE THE SLOPE ON THE NORTHERLY BANK OF LOCUST CREEK, FROM EROSION DAMAGE WHICH OCCURRED DURING TROPICAL STORM IRENE. THIS PROJECT ONLY INCLUDES WORK FOR PHASE 1 AND PHASE 2 AS INDICATED ON THE DRAWINGS.

ARMY CORPS OF ENGINEER NOTES:

1. THE AVERAGE VOLUME OF FILL TO BE PLACED BELOW THE ORDINARY HIGH WATER IS 570 CY. WHICH IS AN AVERAGE OF 0.92CY/LF.
2. THE SQUARE FEET OF AREA OF FILL TO BE PLACED BELOW THE OHWM IS 15,400 SF.
3. THE LINEAR FEET OF STREAM BANK IMPACT IS 620 L.F.
4. THERE ARE NO TEMPORARY FILLS NECESSARY TO COMPLETE THE PROJECT.
5. TREE CLEARING AREA: SELECTIVE REMOVAL OF (14) MATURE TREES.
6. THE DIMENSIONS SHOWN ON THIS PLAN WILL NEED TO BE FIELD VERIFIED DURING CONSTRUCTION ACTIVITIES.
7. VERTICAL ELEVATIONS REFERENCE THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88)
8. FEMA FLOOD MAP FOR PROJECT AREA: THE FEDERAL EMERGENCY MANAGEMENT AGENCIES(FEMA) FEDERAL INSURANCE RATE MAP (FIRM) PANEL No.: XXXXX (EFFECTIVE DATE: XXX, XX, 20XX)
9. THERE ARE NO LETTERS OF MAP AMENDMENT (LOMA) IN THE VICINITY OF THE PROJECT.
10. THIS PROJECT REQUIRES THE PREPARATION OF AN EROSION PREVENTION AND SEDIMENT CONTROL PLAN (EPSC). THE EPSC SHALL BE PREPARED IN ACCORDANCE WITH VTRANS REQUIREMENT (ITEM #652.10)

GENERAL NOTES:

1. CONTRACTOR SHALL NOTIFY 'DIG-SAFE' (1-888-344-7233) A MINIMUM OF 72 HOURS PRIOR TO ANY WORK.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR SITE SECURITY.
3. CONTRACTOR SHALL PERFORM ALL WORK IN ACCORDANCE WITH FEDERAL, STATE, AND LOCAL LABOR AND SAFETY REQUIREMENTS (IE OSHA, NIOSH, MSHA, VT DOL, ETC.).
4. AREAS DISTURBED DURING CONSTRUCTION AND NOT RESTORED WITH IMPERVIOUS SURFACES (IE BUILDINGS, PAVEMENTS, STONE, ETC.) SHALL RECEIVE FOUR (4) INCHES OF LOAM AND SEED.
5. UPON AWARD OF THE CONTRACT THE CONTRACTOR SHALL MAKE ALL NECESSARY CONSTRUCTION NOTIFICATIONS AND APPLY FOR AND OBTAIN NECESSARY PERMITS, PAY FEES, AND POST BONDS ASSOCIATED WITH THE WORK INDICATED ON THE DRAWINGS, SPECIFICATIONS, AND CONTRACT DOCUMENTS.
6. THE CONTRACTOR SHALL NOT CLOSE OR OBSTRUCT ROADWAYS, SIDEWALKS, FIRE HYDRANTS, AND/OR RIGHT-OF-WAYS WITHOUT APPROPRIATE PERMITS.
7. AREAS DISTURBED BY THE CONTRACTOR OUTSIDE OF THE LIMITS OF WORK SHALL BE RESTORED BY THE CONTRACTOR TO THEIR ORIGINAL CONDITION AT NO ADDITIONAL EXPENSE TO THE OWNER. 'ORIGINAL CONDITION' SHALL BE DETERMINED BY THE ENGINEER.
8. IN THE EVENT THAT SUSPECTED CONTAMINATED SOIL, GROUNDWATER, OR OTHER MEDIA ARE ENCOUNTERED DURING CONSTRUCTION ACTIVITIES BASED ON VISUAL, OLFACTORY, OR OTHER EVIDENCE, THE CONTRACTOR SHALL STOP ALL OPERATIONS IN THE VICINITY OF THE SUSPECTED CONTAMINATION AND CONTACT THE OWNER IMMEDIATELY.
9. CONTRACTOR SHALL PREVENT DUST, SEDIMENT, AND DEBRIS FROM EXITING THE SITE AND SHALL BE RESPONSIBLE FOR CLEANUP, REPAIRS, AND CORRECTIVE ACTION.
10. DAMAGE RESULTING FROM CONSTRUCTION LOADS SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL EXPENSE TO THE OWNER.
11. CONTRACTOR SHALL CONTROL STORMWATER RUNOFF DURING CONSTRUCTION TO PREVENT ADVERSE EFFECTS TO OFF SITE AREAS, AND SHALL BE RESPONSIBLE FOR REPAIRING ANY DAMAGE AT NO ADDITIONAL EXPENSE TO THE OWNER.
12. THE PROJECT DISTURBS MORE THAN ONE-HALF (1/2) ACRE OF LAND AND REQUIRES A CONSTRUCTION GENERAL PERMIT (CGP) FROM THE ENVIRONMENTAL PROTECTION AGENCY (EPA) AS PART OF THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PHASE II STORMWATER ACT. PRIOR TO THE START OF CONSTRUCTION THE CONTRACTOR SHALL PREPARE A STORMWATER POLLUTION PREVENTION PLAN (SWPPP) AND FILE A NOTICE OF INTENT (NOI) WITH THE EPA. THE CONTRACTOR SHALL CONFIRM THAT THE OWNER HAS ALSO FILED AN NOI.
13. IN THE EVENT OF CONFLICTING STANDARDS, SPECIFICATIONS, REGULATIONS, ETC. THE HIGHER REQUIREMENT SHALL PREVAIL.
14. EXISTING PROPERTY MONUMENTATION DISTURBED DURING CONSTRUCTION SHALL BE SET OR RESET BY A LICENSED LAND SURVEYOR (LLS).
15. IN ORDER TO PROVIDE VISUAL CLARITY ON THE PLANS NOT ALL DEPICTED ITEMS ARE SHOWN ON EVERY PLAN SHEET. THE CONTRACTOR SHALL USE ENTIRE PLAN SETS AND NOT RELY ON INDIVIDUAL SHEETS DURNIGN CONSTRUCTION.
16. STATED DIMENSIONS TAKE PRECEDENCE OVER SCALED DIMENSIONS.
17. SYMBOLS AND LEGENDS OF PROJECT FEATURES ARE GRAPHIC REPRESENTATIONS AND ARE NOT NECESSARILY SCALED TO THEIR ACTUAL DIMENSIONS OR LOCATIONS ON THE DRAWINGS. THE CONTRACTOR SHALL REFER TO THE DETAIL SHEET DIMENSIONS, MANUFACTURERS LITERATURE, SHOP DRAWINGS, AND FIELD MEASUREMENTS OF SUPPLIED PRODUCTS FOR LAYOUT OF THE PROJECT FEATURES.
18. CONTRACTOR SHALL NOT RELY SOLELY ON ELECTRONIC VERSIONS OF PLANS, SPECIFICATIONS, AND DATA FILES THAT ARE OBTAINED FROM DESIGNERS, BUT SHALL VERIFY LOCATION OF PROJECT FEATURES IN ACCORDANCE WITH PAPER COPIES OF THE DRAWINGS AND SPECIFICATIONS THAT ARE SUPPLIED AS PART



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**PHASE I / PHASE II GRADING
LOCUST CREEK RIVERBANK STABILIZATION PROJECT
BARNARD, VERMONT**

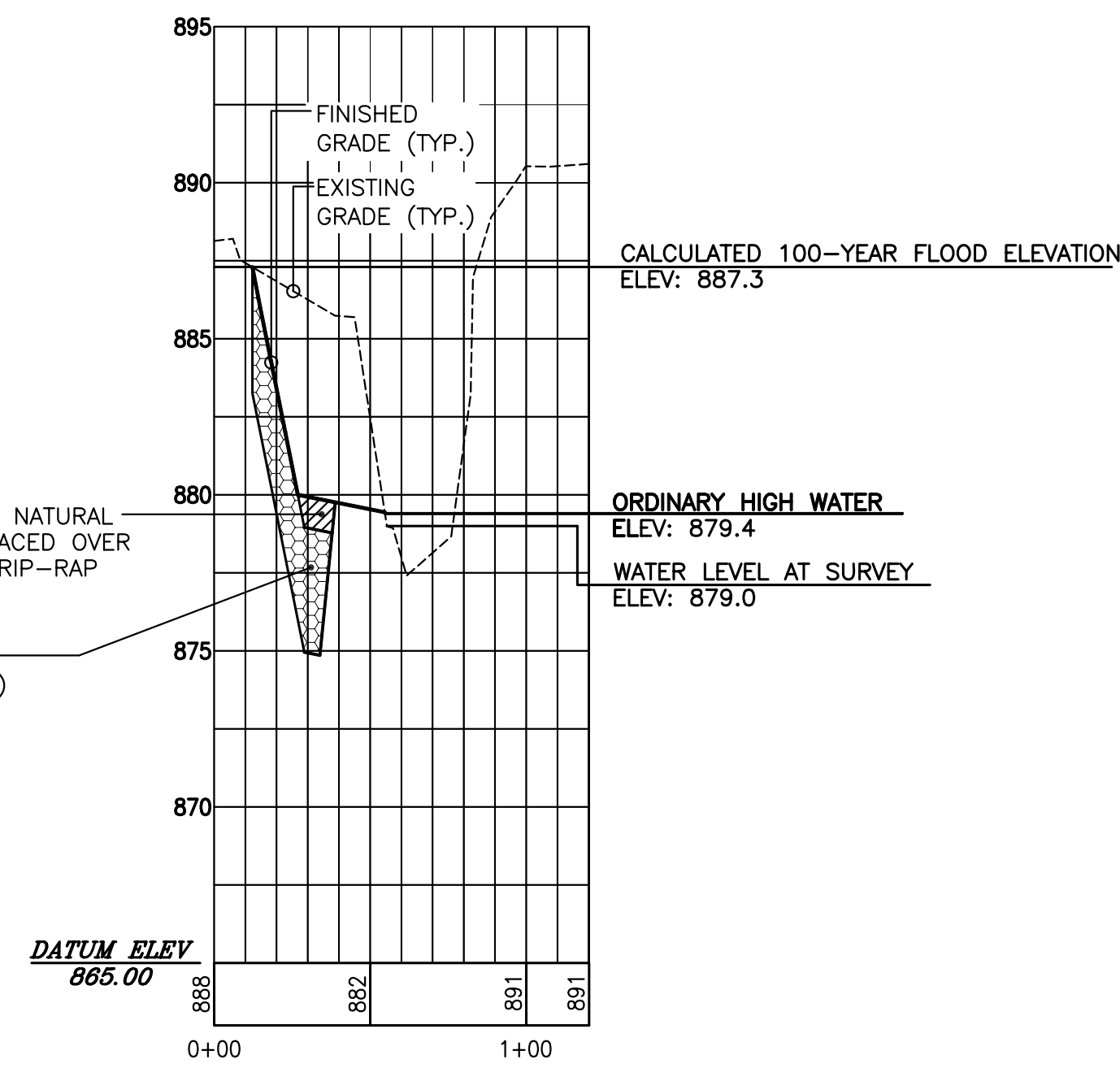
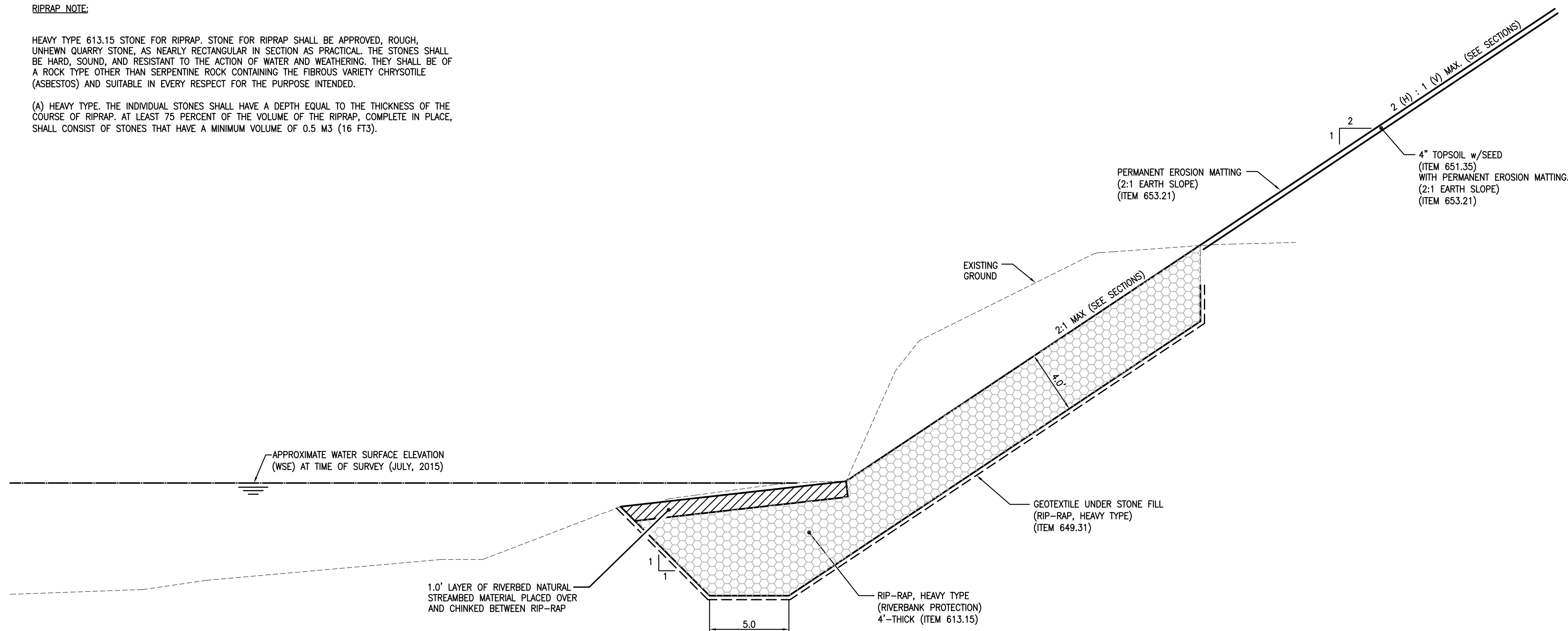
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Date: 06.02.16
Scale: 1" = 20'
Drawn By: REL
Checked By: DSJ
Job No: 1520385
Sheet No. 4 of 7

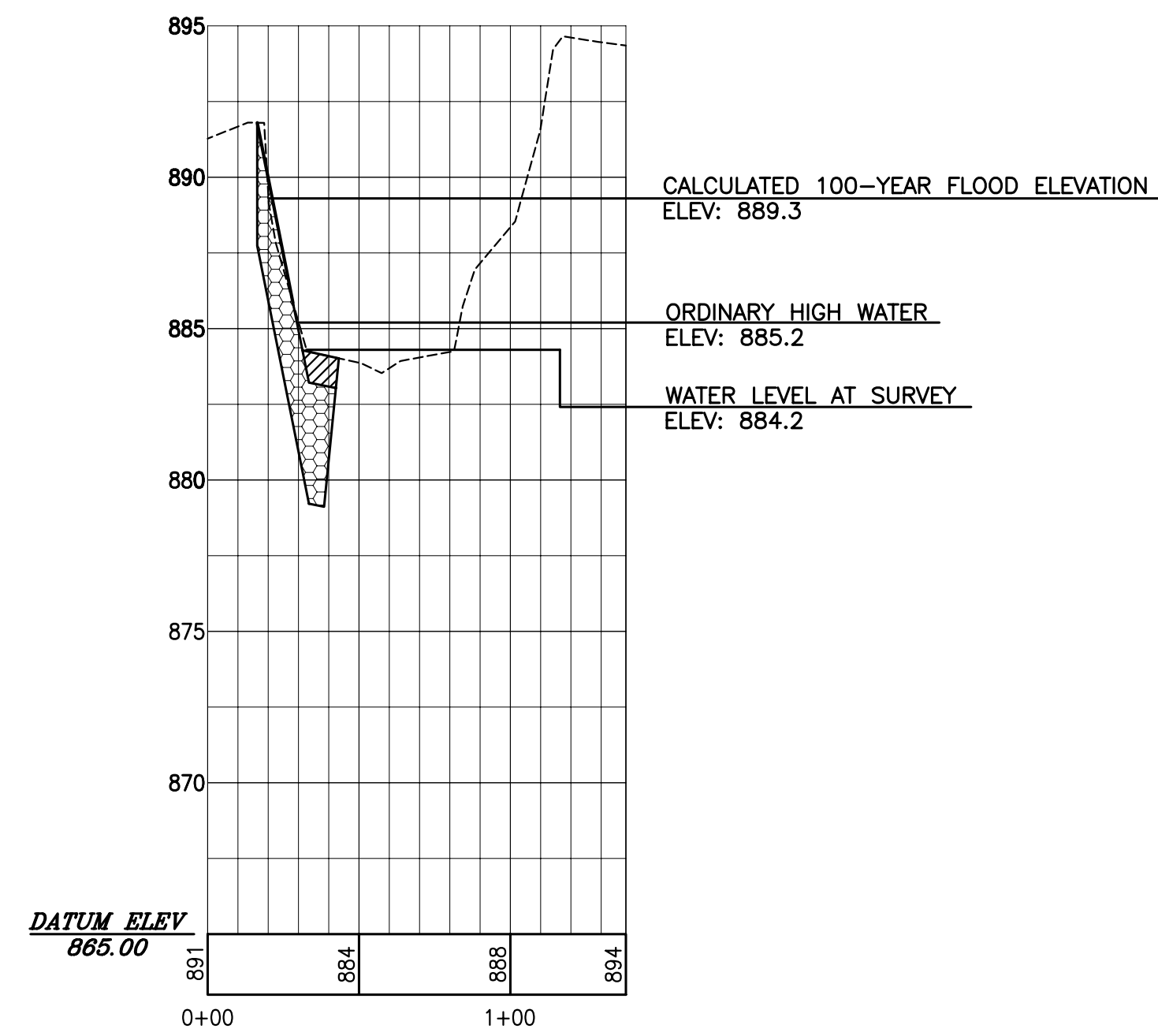
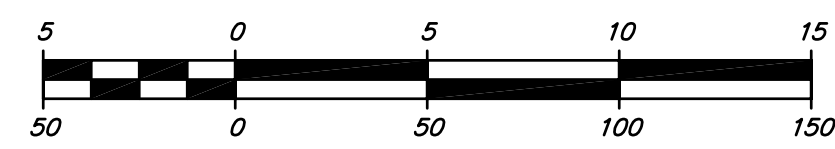
RIPRAP NOTE:

HEAVY TYPE 613.15 STONE FOR RIPRAP. STONE FOR RIPRAP SHALL BE APPROVED, ROUGH, UNHEWN QUARRY STONE, AS NEARLY RECTANGULAR IN SECTION AS PRACTICAL. THE STONES SHALL BE HARD, SOUND, AND RESISTANT TO THE ACTION OF WATER AND WEATHERING. THEY SHALL BE OF A ROCK TYPE OTHER THAN SERPENTINE ROCK CONTAINING THE FIBROUS VARIETY CHRYSOTILE (ASBESTOS) AND SUITABLE IN EVERY RESPECT FOR THE PURPOSE INTENDED.

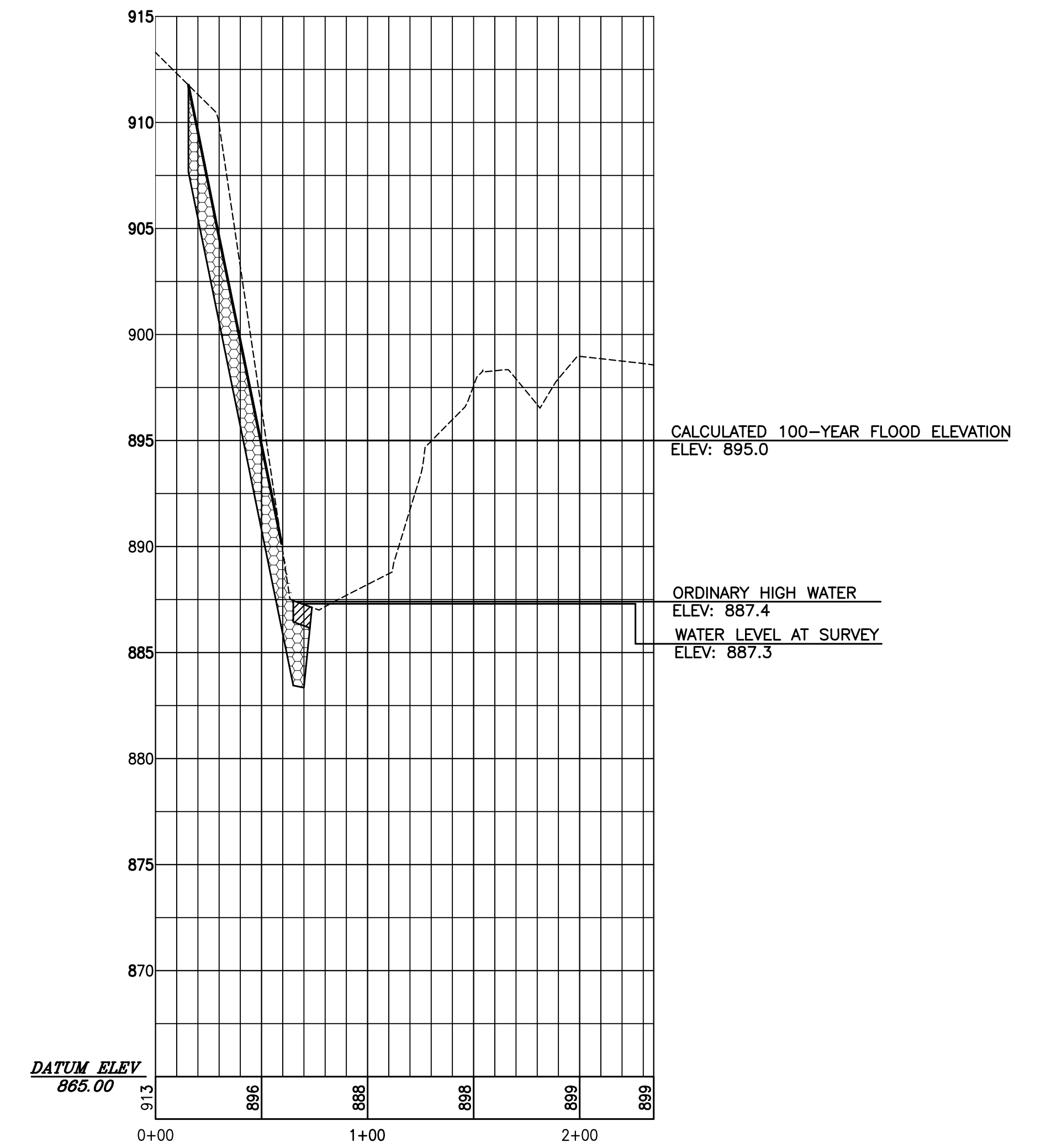
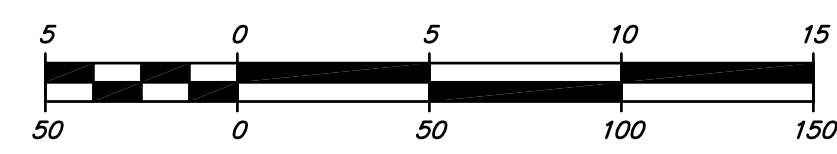
(A) HEAVY TYPE. THE INDIVIDUAL STONES SHALL HAVE A DEPTH EQUAL TO THE THICKNESS OF THE COURSE OF RIPRAP. AT LEAST 75 PERCENT OF THE VOLUME OF THE RIPRAP, COMPLETE IN PLACE, SHALL CONSIST OF STONES THAT HAVE A MINIMUM VOLUME OF 0.5 M³ (16 FT³).



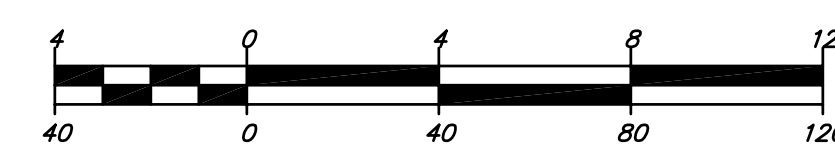
VERT. SCALE: 1" = 5'
HORIZ. SCALE: 1" = 50'



VERT. SCALE: 1" = 5'
HORIZ. SCALE: 1" = 50'



VERT. SCALE: 1" = 4'
HORIZ. SCALE: 1" = 40'



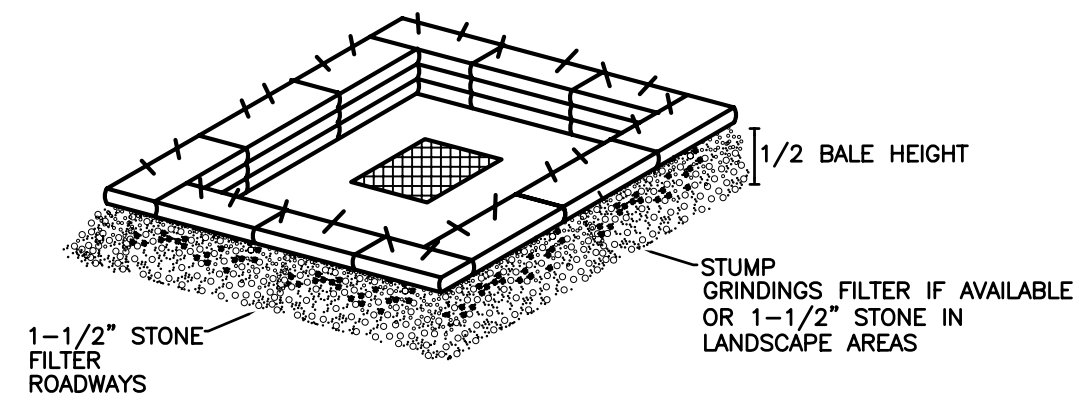
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**GRADING PROFILES
LOCUST CREEK RIVERBANK STABILIZATION PROJECT
BARNARD, VERMONT**

Date:	Revision Description	Drwn.	Chkd.

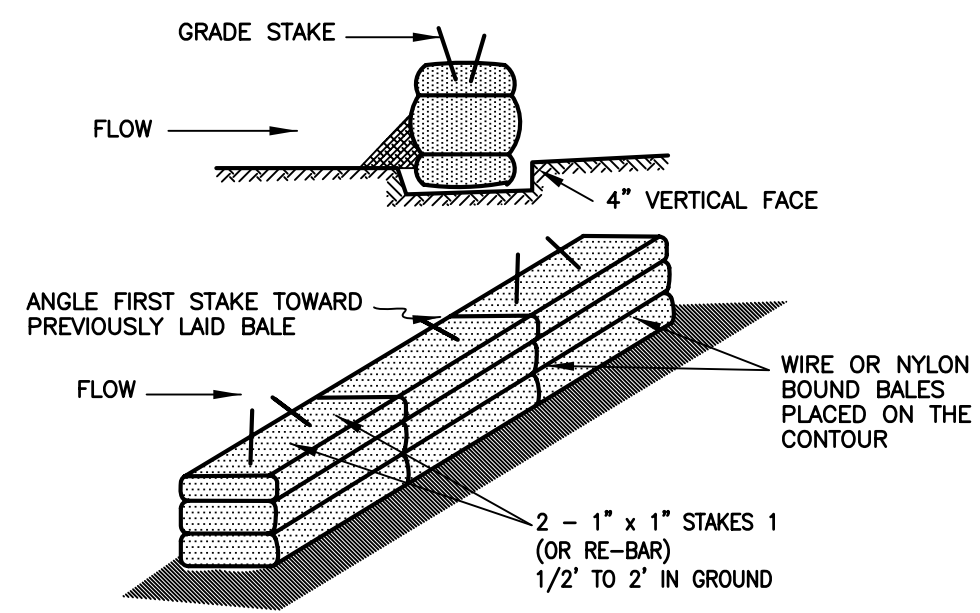
Date: 06.02.16
Scale: AS SHOWN
Drawn By: REL
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Job No: 1520385
Sheet No. 5 of 7



- 1.) BARRIER TO REMAIN UNTIL GRASS IS GROWING IN ALL SEEDD AREAS.
- 2.) PROVIDE HAY BALES ON ALL SIDES OF CATCH BASIN FROM WHICH FLOW CAN APPROACH CATCH BASIN.

STRAW OR HAY BALE AND FILTER BARRIER

NOT TO SCALE

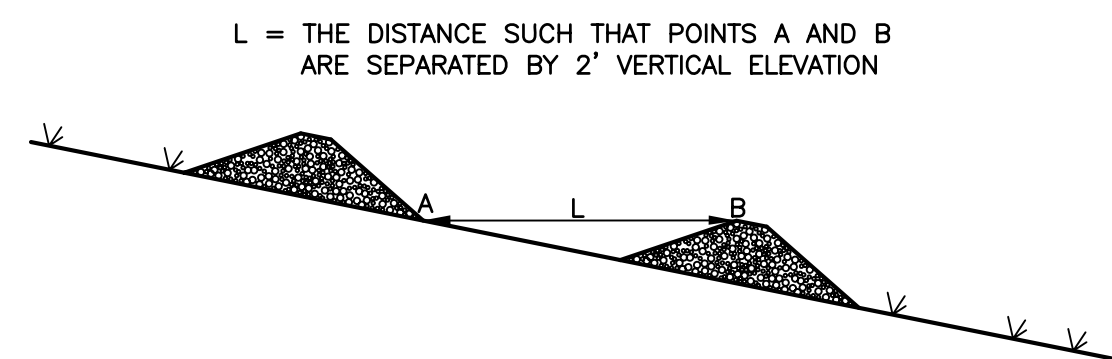


CONSTRUCTION SPECIFICATIONS:

- 1.) BALES SHALL BE PLACED IN A ROW WITH ENDS TIGHTLY ABUTTING THE ADJACENT BALES.
- 2.) EACH BALE SHALL BE EMBEDDED IN THE SOIL A MINIMUM OF 4".
- 3.) BALES SHALL BE SECURELY ANCHORED IN PLACE BY STAKES OR RE-BARS DRIVEN THROUGH THE BALES. THE FIRST STAKE IN EACH BALE SHALL BE ANGLED TOWARD PREVIOUSLY LAID BALE TO FORCE BALES TOGETHER.
- 4.) ROADWAY AREAS STONE SHALL BE PLACED TO A MINIMUM DEPTH OF 1/2 THE BALE HEIGHT. LANDSCAPE AREAS STUMP GRINDINGS OR STONE TO BE PLACED TO A MINIMUM OF 1/2 THE BALE HEIGHT.
- 5.) INSPECTION SHALL BE FREQUENT AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
- 6.) BALES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFULNESS SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.

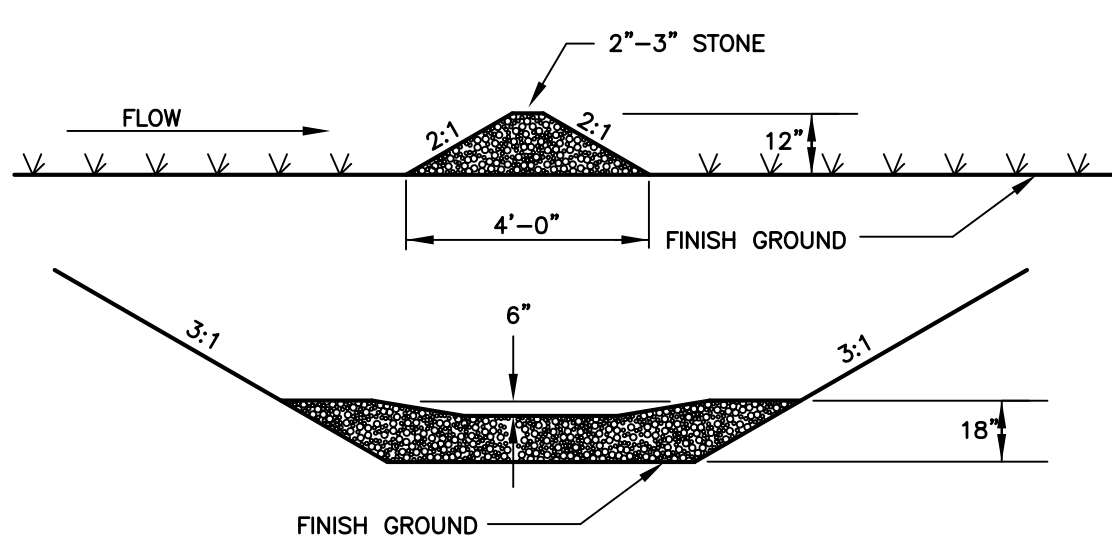
ANCHORING DETAIL

NOT TO SCALE



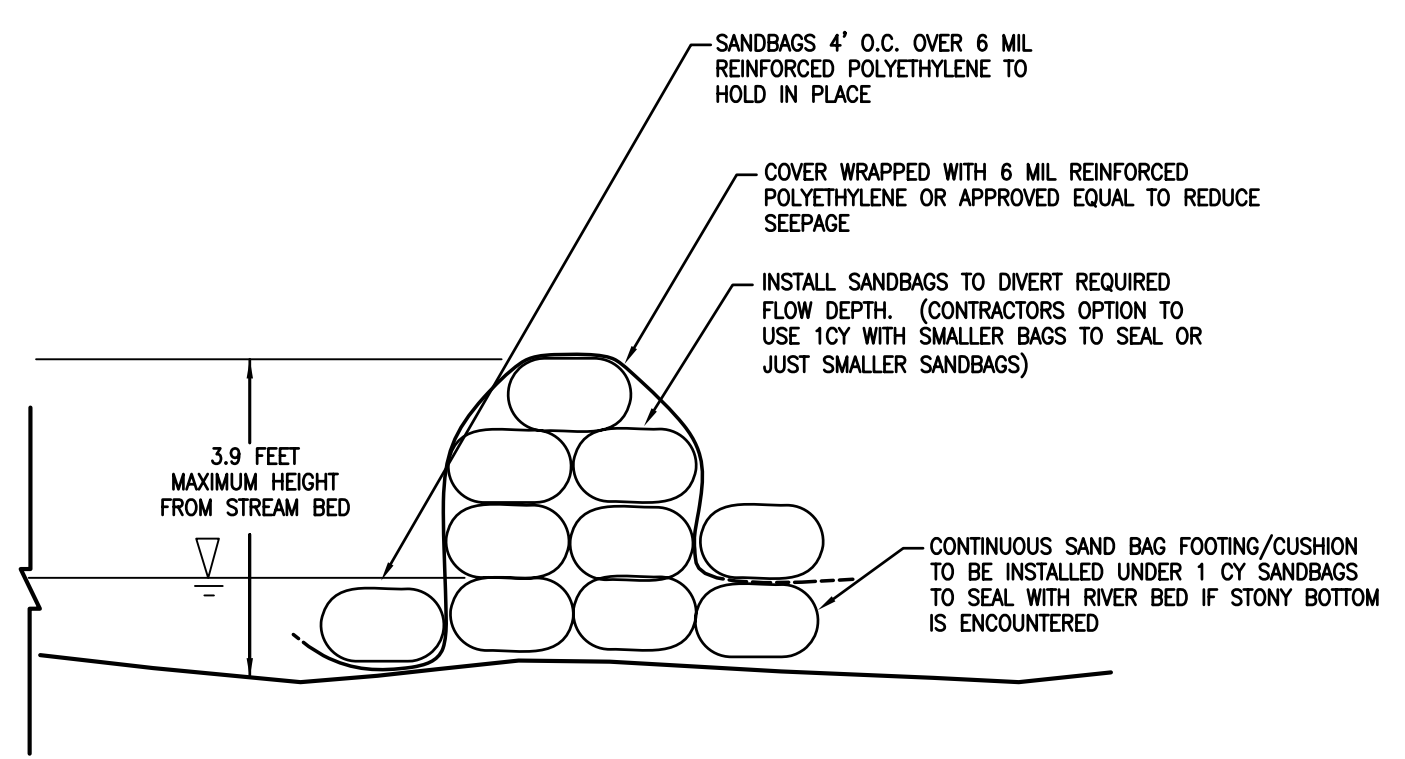
SPACING BETWEEN STRUCTURES

NOT TO SCALE



TEMPORARY & PERMANENT ROCK DAM DETAIL

NOT TO SCALE

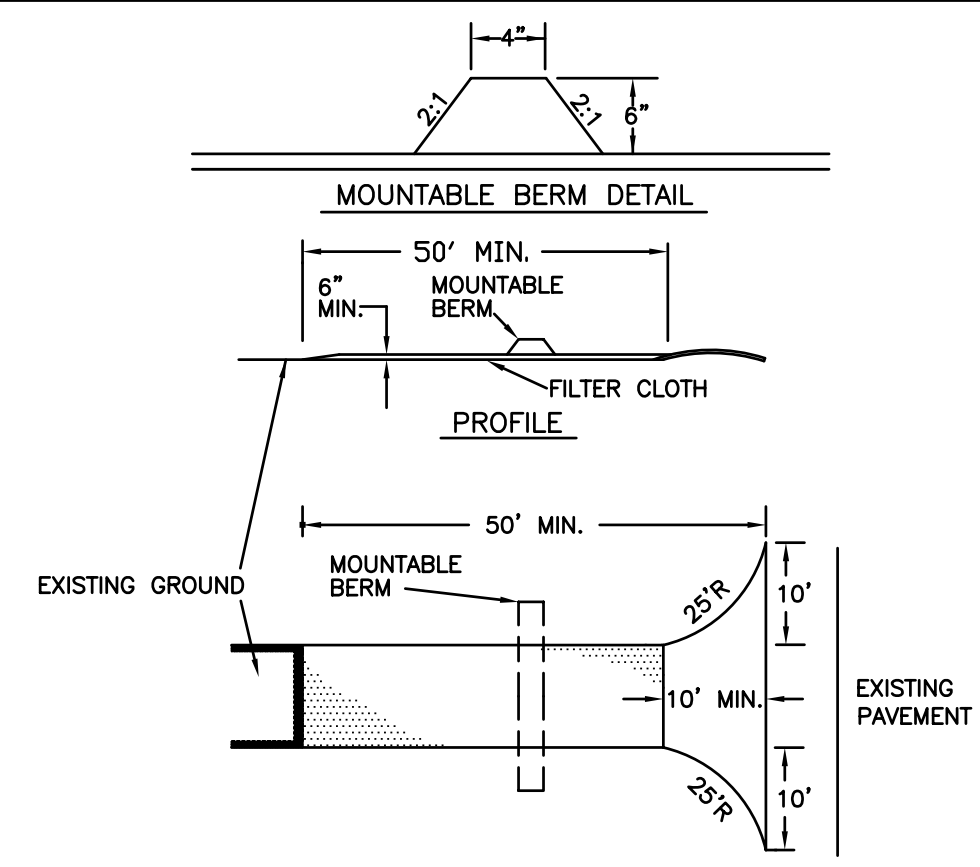


DE-WATERING AND STREAM DIVERSION NOTES:

1. DEWATERING AND STREAM DIVERSION TO BE COMPLETED DURING LOW FLOW AND WHEN NO RAINFALL IS ANTICIPATED.
2. WATER DIVERSION MAY BE COMPLETED USING SANDBAGS AS DETAILED, OR AT THE CONTRACTOR'S OPTION, MAY BE DONE USING JERSEY BARRIERS WRAPPED IN CONTINUOUS REINFORCED HDPE SHEETS.
3. ALL TURBID WATER DE-WATERING SHALL BE PUMPED INTO A SEDIMENTATION BASIN AS DETAILED WITHIN THESE PLANS.
4. SANDBAG BERM IS INTENDED TO BE USED FOR FLOW CONDITIONS UP TO 3.9'.

SANDBAG WATER DIVERSION BERM

NOT TO SCALE

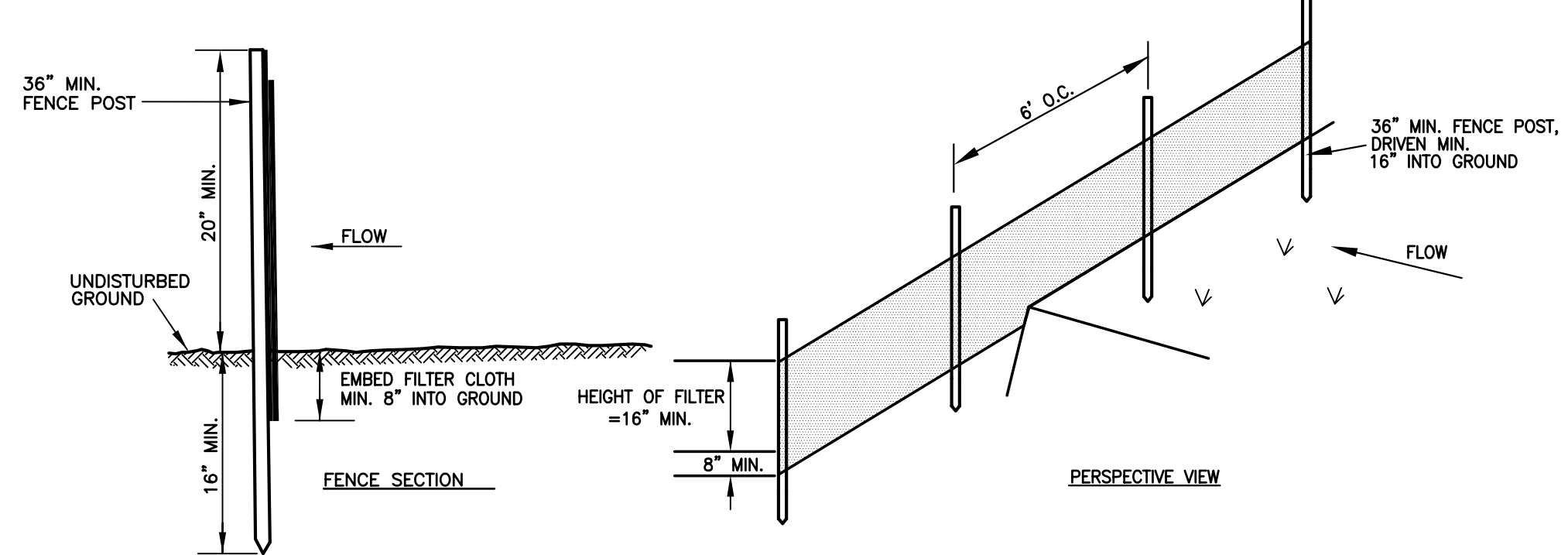
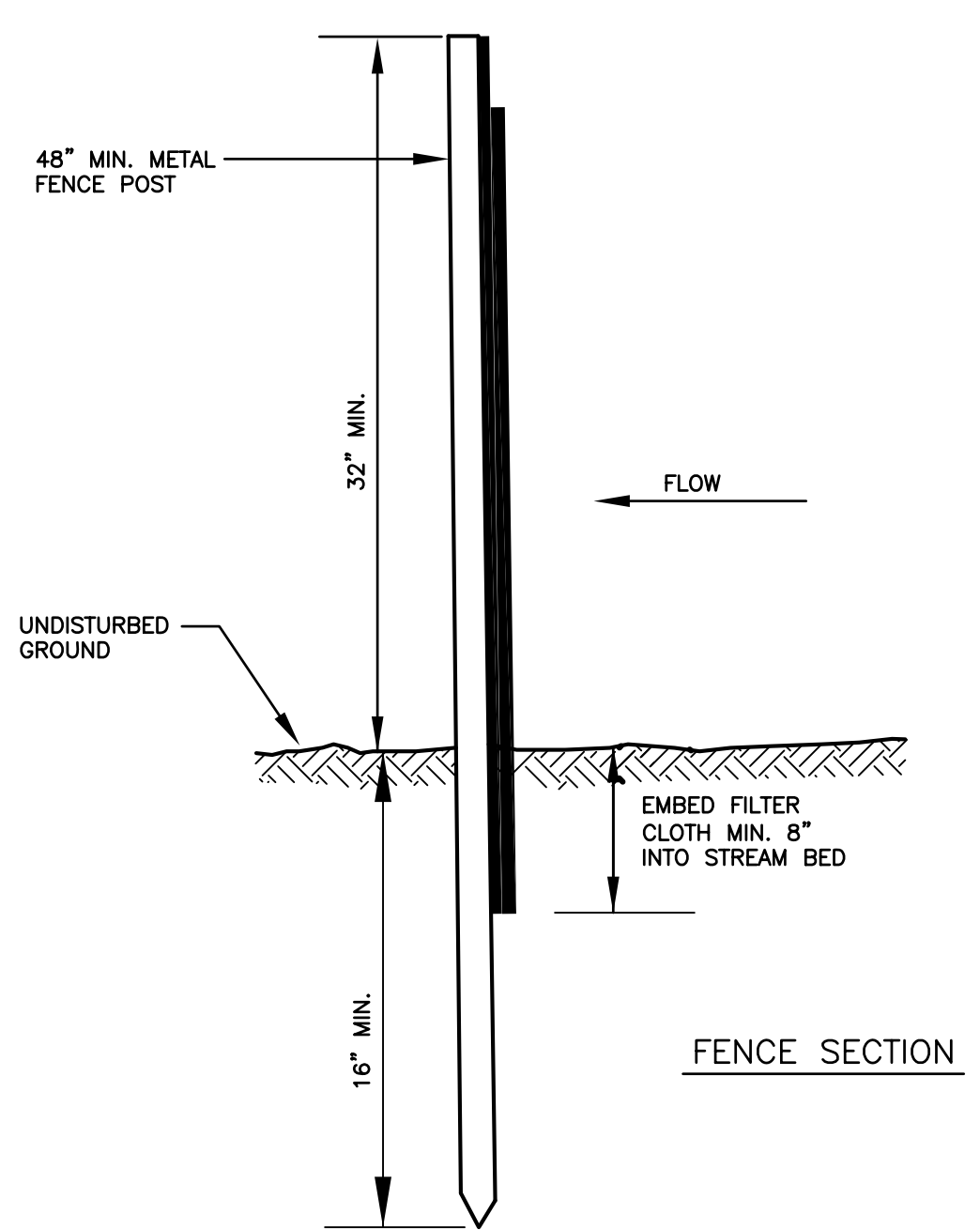


NOTES:

1. STONE FOR A STABILIZED CONSTRUCTION ENTRANCE SHALL BE 2 TO 4 INCH STONE, RECLAIMED STONE, OR RECYCLED CONCRETE EQUIVALENT.
2. THE THICKNESS OF THE STONE FOR THE STABILIZED ENTRANCE SHALL NOT BE LESS THAN 6 INCHES
3. GEOTEXTILE FILTER CLOTH SHALL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING THE STONE.
4. ALL SURFACE WATER THAT IS FLOWING TO OR DIVERTED TOWARD THE CONSTRUCTION ENTRANCE SHALL BE PIPED BENEATH THE ENTRANCE.
5. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS OF WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, WASHED OR TRACKED ONTO PUBLIC Approx. Exit. Right Of Way MUST BE REMOVED PROMPTLY.
6. WHEELS SHALL BE CLEANED TO REMOVE MUD PRIOR TO ENTRANCE ONTO PUBLIC RIGHTS-OF-WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.

TEMPORARY STABILIZED CONSTRUCTION ENTRANCE

NOT TO SCALE

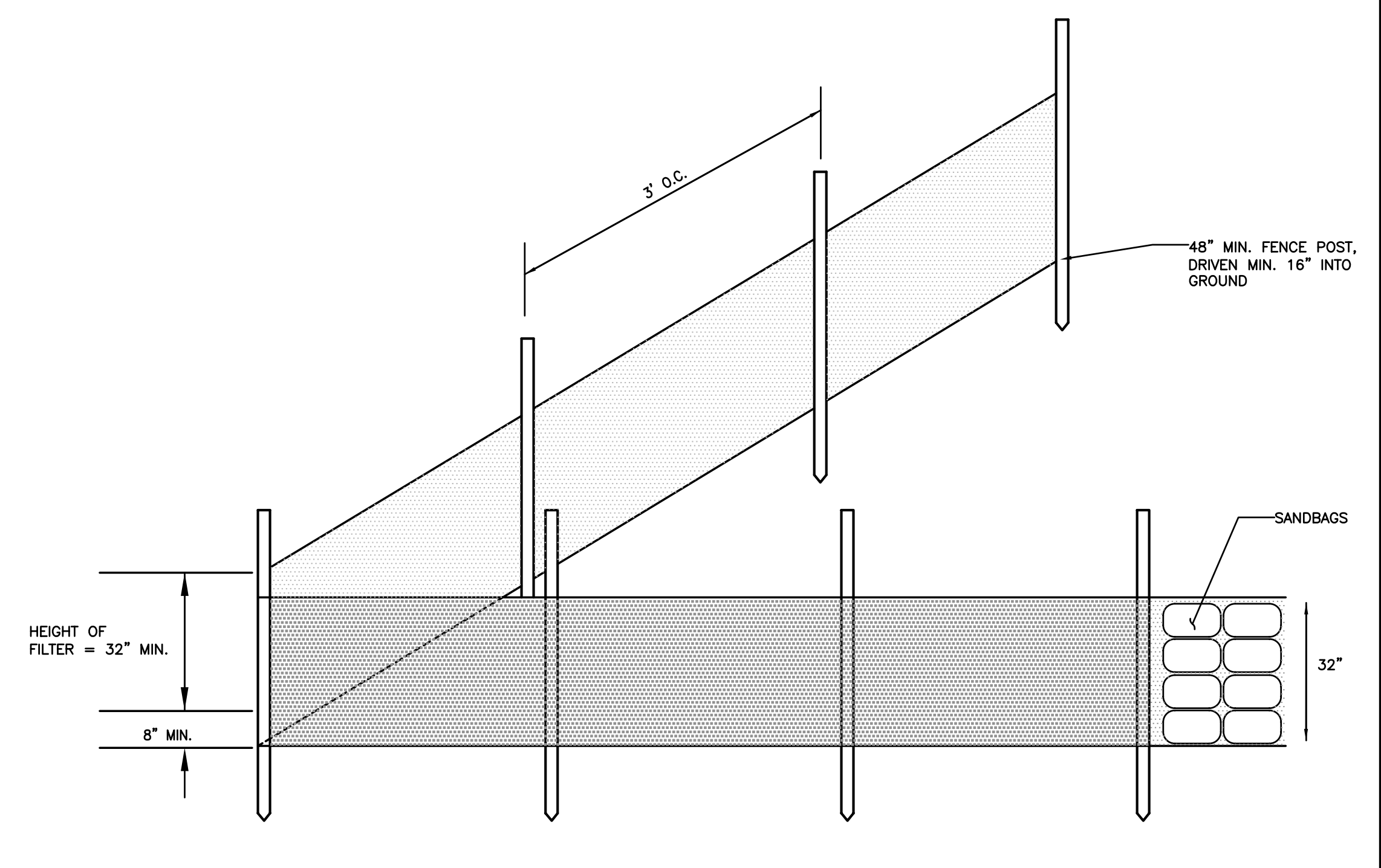


NOTES:

1. FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACES EVERY 24" AT TOP, MID SECTION, AND BOTTOM.
2. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER, THEY SHALL BE OVERLAPPED BY 6 INCHES, FOLDED AND STAPLED.
3. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.

TEMPORARY FABRIC SILTATION FENCE

NOT TO SCALE



NOTES:

1. FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN FENCE WITH TIES SPACES EVERY 24" AT TOP, MID SECTION, AND BOTTOM.
2. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER, THEY SHALL BE OVERLAPPED BY 6 INCHES, FOLDED AND STAPLED.
3. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.

TEMPORARY FABRIC SILTATION FENCE

NOT TO SCALE

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**TYPICAL PROPOSED GRADING CROSS SECTIONS
LOCUST CREEK RIVERBANK STABILIZATION PROJECT
BARNARD, VERMONT**

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				06.02.16
				Scale: AS SHOWN
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				Job No: 1520385
				Sheet No. 6 of 7

CONSTRUCTION SEQUENCES:

- PRIOR TO CONSTRUCTION INSTALL STONE DAMS AS SHOWN ON PLAN AND INSTALL OTHER APPROPRIATE SEDIMENT AND EROSION CONTROL.
- REMOVE TOPSOIL AND OTHER ORGANIC MATERIALS FROM AREAS TO BE DISTURBED. ALL SUCH TOPSOIL REMOVED, SHALL BE STOCKPILED FOR LATER USE. ALL STOCKPILES SHALL BE SEEDED AND MULCHED TO PREVENT LOSS DUE TO EROSION, AND ENCLOSED WITH FABRIC SILT FENCE. WHEN CONSTRUCTION ACTIVITIES ARE TEMPORARILY CEASED FOR MORE THAN 21 DAYS, PERMANENTLY CEASED, OR SHUT DOWN FOR WINTER, THE CONTRACTOR SHALL LEAVE NO SLOPES STEEPER THAN 2:1 AND SHALL IMPLEMENT TEMPORARY LOAMING, SEEDING AND MULCHING. WHERE CONSTRUCTION ACTIVITIES HAVE BEEN SUSPENDED OUTSIDE THE GROWING SEASON ALL EXPOSED SOIL SHALL BE STABILIZED BY MULCHING, AND ALL SLOPES GREATER THAN 3:1 SHALL BE STABILIZED WITH NETTING & PINNING.
- CONSTRUCT CUT AND FILL SLOPES. ALL CUT AND FILL SLOPES TO BE STABILIZED IMMEDIATELY AFTER CONSTRUCTION. ALL SLOPES GREATER THAN 3:1 TO BE STABILIZED WITH JUTE MATTING. ALL CUT AND FILL SLOPES SHALL BE SEEDED AND LOAMED WITHIN 72 HOURS OF ACHIEVING FINISH GRADE.
- CONSTRUCT STORM DRAINAGE, AND OTHER UNDERGROUND UTILITIES. ALL SWALES TO BE PROTECTED WITH TEMPORARY EROSION CONTROL MEASURES SHOWN.
- BEGIN TOP SOILING, SEEDING AND MULCHING IMMEDIATELY AFTER COMPLETION OF EMBANKMENTS. TEMPORARY EROSION CONTROL / DIVERSION CHANNELS SHALL BE IMPLEMENTED WHERE REQUIRED TO PREVENT EROSION OF EMBANKMENTS. ANY EROSION OCCURRING SHALL BE REPAIRED IMMEDIATELY UPON DISCOVERY.
- COMPLETE PERMANENT SEEDING AND MULCHING OF ALL DISTURBED AREAS. ALL TEMPORARY EROSION CONTROL MEASURES TO REMAIN IN PLACE UNTIL A FULL VEGETATIVE COVER HAS BEEN ESTABLISHED ON ALL DISTURBED AREAS.
- SILT FENCES AND HAY BALE BARRIERS TO BE REMOVED ONCE THE SITE HAS STABILIZED.
- REMOVE ACCUMULATIONS OF SEDIMENT FROM DRAINAGE STRUCTURES, AND DRAINAGE DITCHES.
- THE MAXIMUM AMOUNT OF AREA ALLOWED TO BE DISTURBED & UNSTABILIZED AT ONE TIME IS 1.5 ACRES. ALL AREAS SHALL BE STABILIZED WITHIN 45 DAYS FROM INITIAL DISTURBANCE.
- WINTER CONSTRUCTION NOTES:
 - DURING WINTER CONDITIONS, THE MAXIMUM ALLOWABLE DISTURBED AREA SHALL BE 0.5 ACRES.
 - ALL PROPOSED VEGETATED AREAS WHICH DO NOT EXHIBIT A MAXIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15th, OR WHICH ARE DISTURBED AFTER OCTOBER 15th, SHALL BE STABILIZED BY SEEDING AND INSTALLING EROSION CONTROL BLANKETS ON SLOPES GREATER THAN 3:1, AND SEEDING AND PLACING 3 TO 4 TONS OF MULCH PER ACRE, SECURED WITH ANCHORED NETTING, ELSEWHERE, THE INSTALLATION OF EROSION CONTROL BLANKETS OR MULCH AND NETTING SHALL NOT OCCUR OVER ACCUMULATED SNOW OR FROZEN GROUND AND SHALL BE COMPLETED IN ADVANCE OF THAW OR SPRING MELT EVENTS.
 - ALL DITCHES AND SWALES WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15th, OR WHICH ARE DISTURBED AFTER OCTOBER 15th, SHALL BE STABILIZED TEMPORARILY WITH STONE OR EROSION CONTROL BLANKETS APPROPRIATE FOR THE DESIGN FLOW CONDITIONS.
 - AFTER NOVEMBER 15th, INCOMPLETE ROAD OR PARKING SURFACES, WHERE WORK HAS STOPPED FOR THE WINTER SEASON, SHALL BE PROTECTED WITH A MINIMUM OF 3 INCHES OF CRUSHED GRAVEL PER VTRANS ITEM 301.26
- AN AREA SHALL BE CONSIDERED STABLE IF ONE OF THE FOLLOWING HAS OCCURRED:
 - BASE COURSE GRAVELS HAVE BEEN INSTALLED IN AREAS TO BE PAVED;
 - A MINIMUM OF 85% VEGETATIVE GROWTH HAS BEEN ESTABLISHED;
 - A MINIMUM OF 3" OF NON-EROSIVE MATERIAL SUCH AS STONE OR RIP-RAP HAS BEEN INSTALLED; OR
 - EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.
- THE WATER BYPASS AND DIVERSION SYSTEM NECESSARY IN ORDER TO CONSTRUCT THIS BRIDGE SHALL BE DESIGNED BY THE CONTRACTOR AND SUBMITTED FOR REVIEW AND APPROVAL TO PATRICK ROSS, ENGINEER, AT THE VT DEC WATER MANAGEMENT. TELEPHONE NO. 802-279-1143, E-mail: patrick.ross@state.vt.us

EROSION CONTROL INSPECTION AND MAINTENANCE NOTES:

- ALL TEMPORARY EROSION CONTROL MEASURES WILL BE INSPECTED DAILY BY THE GENERAL CONTRACTOR. THE EPCO PREPARER WILL INSPECT THE EROSION CONTROL MEASURES AT LEAST ONCE EVERY 14 CALENDAR DAYS, AND WITHIN 24 HOURS AFTER A STORM EVENT OF 0.25 INCHES OR GREATER, OR MORE FREQUENTLY AS REQUIRED. A DETAILED MAINTENANCE INSPECTION REPORT SHALL BE FILLED OUT AT THE TIME OF EACH INSPECTION BY A COMPETENT INDIVIDUAL APPOINTED BY THE SITE SUPERINTENDENT OR OWNER. THE INSPECTOR WILL BE TRAINED IN ALL THE INSPECTION AND MAINTENANCE PRACTICES NECESSARY FOR KEEPING THE EROSION AND SEDIMENT CONTROLS USED ONSITE IN GOOD WORKING ORDER. ALL MEASURES WILL BE MAINTAINED IN GOOD WORKING ORDER. IF A REPAIR IS NECESSARY, IT WILL BE INITIATED WITHIN 24 HOURS OF REPORT. COPIES OF THE WEEKLY INSPECTION REPORTS SHALL BE AVAILABLE ONSITE FOR REVIEW.
- THE SMALLEST PRACTICAL AREA SHALL BE DISTURBED AT ANY GIVEN TIME PRIOR TO STABILIZATION.
- SILT FENCE AND HAY BARRIERS WILL BE INSPECTED FOR DEPTH OF SEDIMENT. BUILT UP SEDIMENT WILL BE REMOVED WHEN IT REACHES A MAXIMUM DEPTH OF 1/3 THE HEIGHT OF THE FENCE OR HAY BALE.
- IF EROSION IN DITCH LINES AND CHANNELS OCCURS THESE AREAS SHALL BE LINED WITH RIP-RAP OR CHANNEL STABILIZATION MATTING AS NECESSARY TO AVOID FURTHER EROSION.
- SEDIMENT FILTERS AND DEEP SUMP SEDIMENT BASINS WILL BE INSPECTED FOR DEPTH OF SEDIMENT. AT A MINIMUM SEDIMENT SHOULD BE REMOVED AND TRAP RESTORED TO ITS ORIGINAL VOLUME WHEN SEDIMENT REACHES 1/2 OF THE ORIGINAL VOLUME.
- DIVERSION BERMS AND DAMS SHALL BE INSPECTED AND ANY BREACHES PROMPTLY REPAIRED.
- STONE CHECK DAMS SHOULD BE INSPECTED FOR THE ACCUMULATION OF SEDIMENT, AND DEBRIS WHICH MAY IMPEDE THE FILTERING AND VELOCITY REDUCTION OF STORM WATER RESULTING IN THE SEDIMENTATION AND EROSION OF CHANNELS. REPLACE STONE AS NECESSARY TO MAINTAIN THEM IN GOOD WORKING ORDER.
- BLOCK AND GRAVEL INLET PROTECTION SHOULD BE INSPECTED FOR SEDIMENT BUILD UP. SEDIMENT SHOULD BE REMOVED WHEN IT HAS REACHED A DEPTH OF 1/2 THE DESIGN DEPTH OF THE TRAP.
- STABILIZED CONSTRUCTION ENTRANCES SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS OF WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, WASHED OR TRACKED ONTO PUBLIC Approx. Exit Right Of Way MUST BE REMOVED PROMPTLY. WHEELS SHALL BE CLEANED TO REMOVE MUD PRIOR TO ENTRANCE ONTO PUBLIC RIGHTS-OF-WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
- ALL TEMPORARY OR PERMANENTLY SEEDED AREAS SHOULD BE INSPECTED FOR EROSION AND BARE SPOTS. AREAS SHALL BE REPAIRED AND LOAMED SEEDED AND MULCHED AS NECESSARY.
- ALL DISTURBED AREAS SHALL BE LOAMED, SEEDED, AND MULCHED WITH HAY. TOPSOIL SHALL BE APPLIED IN A 4 INCH MINIMUM THICKNESS. HAY TO BE APPLIED AT A RATE OF 70 TO 90 POUNDS PER 1000 SQUARE FEET. ANY HAY THAT HAS BEEN BLOWN AWAY SHALL BE RE-APPLIED.
- THE SEED BED WILL BE PREPARED AS FOLLOWS:
 - SURFACE AND SEEPAGE WATER SHOULD BE DRAINED OR DIVERTED FROM THE SITE TO PREVENT DROWNING OR WINTER KILLING OF THE PLANTS.
 - STONES LARGER THAN 4 INCHES AND TRASH SHOULD BE REMOVED BECAUSE THEY INTERFERE WITH SEEDING AND FUTURE MAINTENANCE OF THE AREA. WHERE FEASIBLE, THE SOIL SHOULD BE TILLED TO A DEPTH OF ABOUT 4 INCHES TO PREPARE A SEEDBED AND MIX FERTILIZER AND LIME INTO THE SOIL. THE SEEDBED SHOULD BE LEFT IN A REASONABLY FIRM AND SMOOTH CONDITION. THE LAST TILLAGE OPERATION SHOULD BE LEFT IN A REASONABLY FIRM AND SMOOTH CONDITION. THE LAST TILLAGE OPERATION SHOULD BE PERFORMED ACROSS THE SLOPE WHEREVER PRACTICAL.

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EROSION CONTROL INSPECTION AND MAINTENANCE NOTES:

13. PERMANENT SEEDING: **(CONT.)**

TEMPORARY SEEDING WILL BE ONE OF THE FOLLOWING, BASED ON TIME OF YEAR:

TIME PERIOD	SEED TYPE	APPLICATION RATE (POUNDS / ACRE)
AUGUST 15 TO SEPTEMBER 5	WINTER RYE	112
NO LATER THAN MAY 15	OATS	80
APRIL 1 TO JUNE 1 AND AUGUST 15 TO SEPTEMBER 15	PERENNIAL RYE GRASS	30

14. AFTER THE ENTIRE SITE IS STABILIZED, THE ACCUMULATED SEDIMENT WILL BE REMOVED FROM ALL EROSION CONTROL DEVICES AND THE AREAS DISTURBED BY THEIR REMOVAL WILL BE SMOOTHED, LOAMED, SEEDED, AND MULCHED WITH HAY.

PRODUCT SPECIFIC PRACTICES

PETROLEUM PRODUCTS:

- ALL ONSITE VEHICLES WILL BE MONITORED FOR LEAKS AND RECEIVE REGULAR PREVENTIVE MAINTENANCE TO REDUCE THE CHANCE OF LEAKAGE
- ALL VEHICLE REFUELING, OILING AND / OR GREASING, SHALL BE CONFINED TO THE VEHICLE MAINTENANCE PAD (CONSTRUCTION DETAIL SHOWN ON THIS PLAN), THROUGHOUT THE DURATION OF EARTH EXCAVATION AND FIT RESTORATION OPERATIONS.
- SHOULD ANY FUEL, HYDRAULIC OIL OR ENGINE OIL SPILL OCCUR:
 - THE PLASTIC ON THE LOWER SIDE OF THE PAD SHALL BE SWIVELED UP AGAINST THE SAND SLOPE AND STABILIZED IN THAT POSITION.
 - ANY CONTAMINATED SOILS SHALL BE HAULLED OFF-SITE AND DISPOSED OF BY AND THROUGH A STATE APPROVED HAZARDOUS MATERIAL DISPOSAL CONTRACTOR.
- PLASTIC AREAS EXPOSED TO SUNLIGHT SHOULD BE CHECKED EVERY TWO MONTHS FOR U.V. DETERIORATION. SHOULD THE PLASTIC BECOME BRITTLE, THE PAD SHALL BE UNDERLAIN WITH NEW PLASTIC.
- IN THE EVENT OF A LARGE SPILL (25 GALLONS OR MORE) CONTACT THE STATE OF VERMONT AGENCY OF NATURAL RESOURCES, WASTE MANAGEMENT DIVISION. (802) 828-1138 (OFFICE HOURS REPORTING) OR (800) 641-5005 (24 HR REPORTING)
- PETROLEUM PRODUCTS WILL BE STORED IN TIGHTLY SEALED CONTAINERS WHICH ARE CLEARLY LABELED. REFUELING BARRELS SHOULD BE PLACED WITHIN A CONTAINMENT WALL OR BERM.
- ASPHALT PRODUCTS USED ONSITE WILL BE APPLIED AND STORED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS

FERTILIZERS:

- FERTILIZERS USED WILL BE APPLIED ONLY IN THE MINIMUM AMOUNTS RECOMMENDED BY THE MANUFACTURER
- ONCE APPLIED, FERTILIZER WILL BE WORKED INTO THE SOIL TO LIMIT EXPOSURE TO STORM WATER
- STORAGE WILL BE IN A COVERED SHED.
- THE CONTENTS OF PARTIALLY USED BAGS WILL BE TRANSFERRED TO SEALABLE BAGS.

PAINTS:

- ALL CONTAINERS WILL BE TIGHTLY SEALED AND STORED WHEN NOT REQUIRED FOR USE.
- EXCESS PAINT AND CLEANING MATERIALS WILL NOT BE DISCHARGED TO THE STORM SEWER SYSTEM BUT WILL BE PROPERLY DISPOSED OF ACCORDING TO MANUFACTURER'S INSTRUCTIONS OR STATE AND LOCAL REGULATIONS.

CONCRETE TRUCKS:

- CONCRETE TRUCKS WILL NOT BE ALLOWED TO WASH OUT OR DISCHARGE SURPLUS CONCRETE OR DRUM WASH WATER ONSITE.

NON STORM WATER DISCHARGES

THE FOLLOWING NON STORM DISCHARGES WILL ACCRUE FROM THE SITE DURING CONSTRUCTION AND WILL BE PROPERLY TREATED PRIOR TO DISCHARGE.

- WATER FROM WATER LINE FLUSHING
- PAVEMENT WASH WATERS (WHERE NO SPILLS OR LEAKS OF TOXIC OR HAZARDOUS MATERIALS HAVE OCCURRED).
- UNCONTAMINATED GROUNDWATER (FROM DEWATERING EXCAVATION)

WASTE DISPOSAL

- ALL WASTE MATERIALS WILL BE COLLECTED AND STORED IN A METAL DUMPSTER SUPPLIED BY A LICENSED SOLID WASTE MANAGEMENT COMPANY. THE DUMPSTER WILL MEET ALL LOCAL AND STATE SOLID WASTE MANAGEMENT REGULATIONS .
- ALL TRASH AND CONSTRUCTION DEBRIS FROM THE SITE WILL BE DEPOSITED IN THE DUMPSTER.
- THE DUMPSTER WILL BE EMPTIED WHEN IT HAS REACHED ITS DESIGN CAPACITY.
- NO CONSTRUCTION WASTE MATERIALS WILL BE BURIED ONSITE.
- ALL HAZARDOUS WASTE MATERIALS WILL BE DISPOSED OF IN THE MANNER SPECIFIED BY LOCAL OR STATE REGULATIONS OR BY THE MANUFACTURER.
- PORTABLE SANITARY FACILITIES WILL BE SUPPLIED BY A LICENSED SANITARY WASTE MANAGEMENT CONTRACTOR AS REQUIRED BY LOCAL AND STATE REGULATIONS. THESE FACILITIES WILL BE CLEANED AS NECESSARY TO MAINTAIN A CLEAN AND SANITARY FACILITY.
- ALL PERSONNEL WILL BE INSTRUCTED REGARDING THE CORRECT PROCEDURE FOR WASTE DISPOSAL. NOTICES STATING THESE PROCEDURES MUST POSTED ON THE SITE.
- THE INDIVIDUAL APPOINTED BY THE SITE CONTRACTOR OR OWNER TO DO SITE INSPECTIONS SHALL BE RESPONSIBLE FOR SEEING THAT THESE PROCEDURES ARE FOLLOWED.

HAZARDOUS MATERIALS PLAN

INVENTORY FOR POLLUTION PREVENTION PLAN

THE MATERIALS OR SUBSTANCES LISTED BELOW ARE EXPECTED TO BE PRESENT ONSITE DURING CONSTRUCTION

- CONCRETE
- PETROLEUM BASED PRODUCTS
- WOOD
- MASONRY BLOCK
- ASPHALT
- PAINTS (ENAMEL, OIL, LATEX)
- METAL
- CONCRETE
- TAR
- SHINGLES

SPILL PREVENTION PLAN NOTES:

MATERIAL MANAGEMENT PRACTICES:

THE FOLLOWING ARE THE MATERIAL MANAGEMENT PRACTICES THAT WILL BE USED TO REDUCE THE RISK OF SPILLS OR OTHER ACCIDENTAL EXPOSURE OF MATERIALS AND SUBSTANCES TO STORM WATER RUNOFF

GOOD HOUSEKEEPING:

THE FOLLOWING GOOD HOUSEKEEPING PRACTICES WILL BE FOLLOWED ONSITE DURING THE CONSTRUCTION PROJECT:

- AN EFFORT WILL BE MADE TO STORE ONLY ENOUGH PRODUCT REQUIRED TO DO THE JOB
- ALL MATERIALS STORED ONSITE WILL BE STORED IN A NEAT, ORDERLY MANNER IN THEIR APPROPRIATE CONTAINERS AND, IF POSSIBLE, UNDER A ROOF OR OTHER ENCLOSURE
- PRODUCTS WILL BE KEPT IN THEIR ORIGINAL CONTAINERS WITH THE ORIGINAL MANUFACTURER'S LABEL
- SUBSTANCES WILL NOT BE MIXED WITH ONE ANOTHER UNLESS RECOMMENDED BY THE MANUFACTURER
- WHENEVER POSSIBLE, ALL OF A PRODUCT WILL BE USED UP BEFORE DISPOSING OF THE CONTAINER
- MANUFACTURER'S RECOMMENDATIONS FOR PROPER USE AND DISPOSAL WILL BE FOLLOWED.
- THE SITE SUPERINTENDENT WILL INSPECT DAILY TO ENSURE PROPER USE AND DISPOSAL OF MATERIALS ONSITE.

HAZARDOUS PRODUCTS:

- PRODUCTS WILL BE KEPT IN ORIGINAL CONTAINER UNLESS THEY ARE NOT RESEALABLE
- ORIGINAL LABEL AND MATERIAL SAFETY DATA WILL BE RETAINED; THEY CONTAIN IMPORTANT PRODUCT INFORMATION.
- IF SURPLUS PRODUCT MUST BE DISPOSED OF, MANUFACTURE'S OR LOCAL AND STATE RECOMMENDED METHODS FOR PROPER DISPOSAL WILL BE FOLLOWED.

ADDITIONAL NOTES:

IN ADDITION TO THE GOOD HOUSEKEEPING AND MATERIAL MANAGEMENT PRACTICES DISCUSSED IN THE PREVIOUS SECTIONS OF THIS PLAN, THE FOLLOWING PRACTICES WILL BE FOLLOWED FOR SPILL PREVENTION AND CLEANUP:

- MANUFACTURER'S RECOMMENDED METHODS FOR SPILL CLEANUP WILL BE CLEARLY POSTED AND SITE PERSONNEL WILL BE MADE AWARE OF THE PROCEDURES AND LOCATION OF THE INFORMATION AND CLEANUP SUPPLIES.
- MATERIAL AND EQUIPMENT NECESSARY FOR SPILL CLEANUP WILL BE KEPT IN THE MATERIAL STORAGE AREA
- ALL SPILLS WILL BE CLEANED UP IMMEDIATELY AFTER DISCOVERY
- SPILLS OF TOXIC OR HAZARDOUS MATERIAL WILL BE REPORTED TO THE APPROPRIATE STATE OR LOCAL GOVERNMENT AGENCY
- THE SPILL PREVENTION PLAN WILL BE ADJUSTED TO INCLUDE MEASURES TO PREVENT THIS TYPE OF SPILL FROM OCCURRING AGAIN AND IT WILL BE ADJUSTED IF ADDITIONAL HAZARDOUS MATERIALS ARE BROUGHT ONSITE.
- THE ONSITE SUPERVISOR WILL APPOINT A PERSON RESPONSIBLE FOR DAILY AND WEEKLY INSPECTIONS AND REPORTS.

HOLDEN ENGINEERING & SURVEYING, Inc.

**EROSION CONTROL MEASURES
LOCUST CREEK RIVERBANK STABILIZATION PROJECT
BARNARD, VERMONT**

Date:	Revision Description	Drwn.	Chkd.

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 Scale: AS SHOWN
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 Checked By: DSJ
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 Sheet No. 7 of 7